REMARKS

In the Office Action dated October 13, 2010, the Examiner rejects claims 1, 3, 5, 11-15, 17, 19 and 20 under 35 U.S.C. § 102(e) and rejects claims 1, 3-15 and 17-20 under 35 U.S.C. §103(a). With this Response, Applicants have not amended, added or canceled claims. After entry of this Response, claims 1, 3-15 and 17-20 remain pending in the Application. Reconsideration of the Application based on the remarks below is respectfully requested. Entry of the response after final is requested for appeal.

Response to rejections under 35 U.S.C. §102(e)

The Examiner rejects claims 1, 3, 5, 11-15, 17, 19 and 20 under 35 U.S.C. § 102(e) as being anticipated by Nagayama et al. (US 2005/0208347). Independent claims 1, 13-15 and 17 all include the following limitation: a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell, the discharge circuit configured within each bipolar electrode to electrically balance charged conditions of adjacent electric cells. The positive-electrode layer is formed on one surface of a collector and a negative-electrode layer is formed on an opposing surface of the collector.

The Examiner contends on page 21 of the Office Action in his response to arguments that Nagayama et al. discloses a discharge circuit 50 printed on one or more of the positive-electrode layer 28, the negative electrode layer 26 and electrolyte layer 27 within each cell and refers to the diode forming region 24 in FIG. 3. However, as clearly shown in FIGS. 3 and 4 and described in the specification, "[a] diode forming region 24 intended to form a group of diodes is disposed on one side of each of current collecting bodies 22. . . . On one side of the current collecting body 22, a negative pole layer 26 is formed so as to detour a sealing part 25 serving to secure insulation." (¶[0034]). As shown in FIG. 3, diode 24 is formed on the collector 22, not on the negative electrode layer 26. Diode 24 is actually separated from negative electrode layer 26 by sealing part 25. This is also clearly shown in FIG. 4, as a cross-section of FIG. 3. Diodes 24 never contact one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each cell as they are clearly separated by sealing part 25.

Regarding the Examiner's contention on page 22 that Nagayama discloses diodes formed on the same layer as the positive electrode layers, this is not correct. Like FIG. 3, FIG. 8 shows the diodes on the collector. As recited in the claims, the positive and negative electrode layers are formed on the collector. Accordingly, the collector is not part of either the positive or negative electrode layer. The Examiner is asked to reconsider in light of the explicit claim language. The Examiner is also asked to consider Nagayama's disclosure in paragraph [0049], stating that negative pole layers are formed on one side of the current collecting body and positive pole layers are formed on the other side of the current collecting bodies. "The group of diodes 50 are also formed on these current collecting bodies." They are not formed on the positive and negative pole layers. Applicants clearly disclose the claimed subject matter in FIG. 2, where the discharge circuit 210 is shown on the electrolyte layer 208 with the collector 214 layer shown separated from the discharge circuit 210 by yet another layer. The subject matter is clearly different.

Nagayama et al. clearly fails to disclose at least one element required by each of the independent claims, namely that of a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell, the discharge circuit configured within each bipolar electrode to electrically balance charged conditions of adjacent electric cells. Accordingly, the invention of claims 1, 13-15 and 17, and claims 3, 5, 11, 12, 19 and 20 by their dependency, is not anticipated by Nagayama et al. These claims are thus allowable over the cited reference.

Response to rejections under 35 U.S.C. §103(a)

The Examiner rejects claim 4 under 35 U.S.C. §103(a) as being unpatentable over Nagayama et al. as applied to claim1 above, and further in view of Einthoven et al. (US 2003/0205775). Claim 4 depends from claim 1 to include all of the limitations therein. As explained above, Nagayama et al. fails to teach or suggest at least one element of claim 1. Einthoven et al. also does not teach or suggest a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell. Accordingly, the combination of the two fails to suggest to one skilled in the art such a

discharge circuit. Due at least to its dependency on claim 1, the invention of claim 4 is not rendered obvious by the cited combination, and claim 4 is allowable over the cited references.

The Examiner rejects claims 6-10 and 18 under 35 U.S.C. §103(a) as being unpatentable over Nagayama et al. as applied to claim1 above, and further in view of Horie et al. (US 2001/0019794). Claims 6-10 and 18 depend from claim 1 to include all of the limitations therein. As explained above, Nagayama et al. fails to teach or suggest at least one element of claim 1. Horie et al. also does not teach or suggest this missing element, a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell. Accordingly, the combination of the two fails to suggest to one skilled in the art such a discharge circuit. Due at least to their dependency on claim 1, the invention of claims 6-10 and 18 is not rendered obvious by the cited combination. Thus, claims 6-10 and 18 are allowable over the cited references.

The Examiner rejects claims 1, 3, 5, 11-15, 17, 19 and 20 under 35 U.S.C. §103(a) as being unpatentable over Hisamitsu et al. (US 2004/0038123) in view of Nakanaga et al. (JP 02044660, see English-language abstract). The independent claims recite a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell, the discharge circuit configured within each bipolar electrode to electrically balance charged conditions of adjacent electric cells.

The Examiner contends on page 10 of the Office Action that Hisamitsu et al. discloses a discharge circuit 50 configured within each bipolar electrode 30. The Examiner then states on page 24 of the Office Action in his response to arguments that a circuit is defined as "the complete path of an electric current, including the generating apparatus, intervening resistor or capacitors." As this is the Examiner's definition, and the claims require a circuit within each electrode, then an entire circuit must be within each electrode of Hisamitsu. However, there is no disclosure in Hisamitsu et al of a circuit within each electrode. As stated by the Examiner on page 24, an electrical cell electrically connected to a discharge circuit *is part of* the discharge circuit. The claims do not recite part of a discharge circuit. The claims require a discharge

circuit in each electrode. Hisamitsu et al. clearly teaches that the complete path of its electric circuit requires the bypass circuits 50 to be connected to tabs 400, 401 and 402 (¶[0121]) as shown in FIGS. 12 and 13 and described in at least paragraph [0016] and [0126]. As stated by the Applicants in at least paragraph [0006], voltage detecting wires and tabs are undesirable in that the voltage detecting wires and tabs have to be drawn from each current collector provided between the bipolar electrodes, which often requires long man-hours. Thus, the Applicant's subject matter eliminates their use.

The Examiner acknowledges that Hisamitsu et al. fails to teach or suggest a discharge circuit printed on one or more of the positive, negative and electrolyte layers. As stated by Nakanaga et al., a reverse current preventing diode is laminated on a stainless steel plate 4, which is pressed onto the foil 5 that is brought in close contact with the positive electrode layer 7 with a vacuum. The abstract and accompanying drawing are very clear that the circuit is between a metal plate 4 and foil 5, not on the positive electrode layer 7, the electrolyte layer 6 or the negative electrolyte layer 3. The Examiner does not address this in his response to arguments but only repeats the claim language.

As both Nakanaga et al. and Hisamitsu et al. both fail to disclose at least a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell, the combination of Hisamitsu et al. and Nakanaga et al. fails to suggest to one skilled in the subject matter of the independent claims. As this limitation is recited in independent claims 1, 13-15 and 17, the cited references fail to teach or suggest all the features of these claims, making these claims allowable. In addition, claims 3, 5, 11, 12, 19 and 20 are also allowable at least due to at least their dependency on claim 1.

The Examiner rejects claim 4 under 35 U.S.C. §103(a) as being unpatentable over Hisamitsu et al. in view of Nakanaga et al. as applied to claim 1 above, and further in view of Einthoven et al. Claim 4 depends from claim 1 to include all of the limitations therein. As explained above, the combination of Hisamitsu et al. and Nakanaga et al. fails to teach or suggest at least one element of claim 1. Einthoven et al. also does not teach or suggest a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte

layer within each electric cell. Accordingly, the combination of the three fails to suggest to one skilled in the art such a discharge circuit, rendering claim 1 allowable over the cited references. Due at least to its dependency on claim 1, claim 4 is also allowable over the cited references.

The Examiner rejects claims 6-10 and 18 under 35 U.S.C. §103(a) as being unpatentable over Hisamitsu et al. in view of Nakanaga et al. as applied to claim 1 above, and further in view of Horie et al. Claims 6-10 and 18 depend from claim 1 to include all of the limitations therein. As explained above, the combination of Hisamitsu et al. and Nakanaga et al. fails to teach or suggest at least one element of claim 1. Einthoven et al. also does not teach or suggest a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell. Accordingly, the combination of the three fails to suggest to one skilled in the art such a discharge circuit, rendering claim 1 allowable over the cited references. Due at least to its dependency on claim 1, claims 6-10 and 18 are also allowable over the cited references.

Conclusion

It is submitted that this Response has antecedent basis in the Application as originally filed, including the specification, claims and drawings, and that this Response does not add any new subject matter to the application. Reconsideration of the Application is requested. It is respectfully submitted that this Application is in suitable condition for allowance; notice of which is requested.

If the Examiner feels that prosecution of the present Application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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